

METHOD AND APPARATUS FOR STEREOSCOPIC DISPLAY USING COLUMN INTERLEAVED DATA WITH DIGITAL LIGHT PROCESSING

ABSTRACT OF THE DISCLOSURE

The invention has two main embodiments, a first called column switching and blanking and a second embodiment called doubling. The first embodiment is a projector for displaying a stereoscopic image with projector using one or more digital micromirror devices positioned into a plurality of columns and rows. The projector itself includes a light source, an optical system, a video processing system and a data system for driving the micromirror devices. The data subsystem provides separate data to a plurality of column pairs of the micromirrors. The projector includes a stereoscopic control circuit having a first state of the control circuit for inputting a first eye view of the stereoscopic image and causing the micromirrors of a first column of each column pair to be in various on and off states during said first eye view of said stereoscopic image and for causing all of said micromirrors of a second column of each column pair to be in an off state during said first eye view of said stereoscopic image. A second state of the control circuit is used for inputting a second eye view of the stereoscopic image and causes the micromirrors of the second column of each column pair to be in various on and off states during the second eye view of the stereoscopic image and for causing all of the micromirrors of the first column of each column pair to be in an off state during the second eye view of said stereoscopic image. The second embodiment is a projector for displaying a stereoscopic image with the projector using one or more digital micromirror devices positioned into a plurality of columns and rows. The projector includes a light source, an optical system, a video processing system and a data system for driving said micromirror devices. The data subsystem provides separate data to a plurality of column pairs of the micromirrors. The projector includes a stereoscopic control circuit having a first state for inputting a first eye view of the stereoscopic image and causing each micromirror of each column pair to be in various but identical on and off states during said first eye view of said stereoscopic image. A second state of the control circuit for inputs a second eye view of the stereoscopic image and causes each micromirror of each column pair to be in various but identical on and off states during the second eye view of the stereoscopic image.